

**TRANSMITTAL  
FORM**

(to be used for all correspondence after initial filing)

<b>TRANSMITTAL FORM</b>  (to be used for all correspondence after initial filing)	Application Number	10/735,110
	Filing Date	December 12, 2003
	First Named Inventor	Pawan K. Nimmakayala
	Art Unit	Unassigned
	Examiner Name	Unassigned
Total Number of Pages in This Submission	Attorney Docket Number	P122/MII-94-69v18

**ENCLOSURES (Check all that apply)**

<input type="checkbox"/> Fee Transmittal Form	<input type="checkbox"/> Drawing(s)	<input type="checkbox"/> After Allowance communication to Technology Center (TC)
<input type="checkbox"/> Fee Attached	<input type="checkbox"/> Licensing-related Papers	<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
<input type="checkbox"/> Amendment/Reply	<input type="checkbox"/> Petition	<input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)
<input type="checkbox"/> After Final	<input type="checkbox"/> Petition to Convert to a Provisional Application	<input type="checkbox"/> Proprietary Information
<input type="checkbox"/> Affidavits/declaration(s)	<input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address	<input type="checkbox"/> Status Letter
<input type="checkbox"/> Extension of Time Request	<input type="checkbox"/> Terminal Disclaimer	<input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):
<input type="checkbox"/> Express Abandonment Request	<input type="checkbox"/> Request for Refund	Form 1449 - IDS
<input checked="" type="checkbox"/> Information Disclosure Statement	<input type="checkbox"/> CD, Number of CD(s) _____	Forty (40) References
<input type="checkbox"/> Certified Copy of Priority Document(s)	Remarks	Return Receipt Postcard to Kenneth Brooks
<input type="checkbox"/> Response to Missing Parts/Incomplete Application		
<input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53		

**SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT**

Firm or Individual name	Law Office of Kenneth C. Brooks
Signature	<i>Kenneth C. Brooks</i>
Date	3/2/04

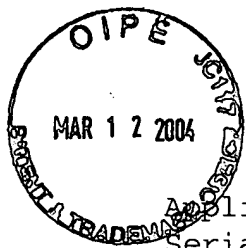
**CERTIFICATE OF TRANSMISSION/MAILING**

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.

Typed or printed name	Alexis Sheffield		
Signature	<i>Alexis Sheffield</i>	Date	March 2, 2004

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Nimmakayala et al.

PATENT APPLICATION

Serial No.: 10/735,110

Group Art Unit: Unassigned

Filing Date: December 12, 2003

Examiner: Unassigned

For: MAGNIFICATION CORRECTION EMPLOYING OUT-OF-PLANE DISTORTION  
OF A SUBSTRATE.

INFORMATION DISCLOSURE STATEMENT

Commissioner  
for Patents  
Alexandria, VA 22313-1450

Sir:

The following information is submitted in compliance with Applicants' duty of disclosure under 37 C.F.R. § 1.56. Form PTO-1449 and a copy of each reference recited below accompanies this document. It is respectfully requested that the cited information be expressly considered during the prosecution of this application, and the references be made of record therein and appear among the "references cited" on any patent to issue therefrom.

ISSUED PATENTS

<u>Patent Number</u>	<u>Inventor</u>	<u>Grant Date</u>
4,326,805	Feldman et al.	04/27/1982
4,724,222	Felman	02/09/1988
4,731,155	Napoli et al.	03/15/1988
4,929,083	Brunner	05/29/1990
5,072,126	Proglor	12/10/1991
5,204,739	Domenicali	04/20/1993
5,206,983	Guckel et al.	05/04/1993
5,425,848	Haisma et al.	06/20/1995
5,633,505	Chung et al.	05/27/1997
5,772,905	Chou	06/30/1998
5,776,748	Singhvi et al.	07/07/1998
5,802,914	Fassler et al.	09/08/1998
5,877,036	Kawai	03/02/1999
5,877,861	Ausschitt et al.	03/02/1999

5,900,160	Whitesides et al.	05/04/1999
5,948,470	Harrison et al.	09/07/1999
6,039,897	Lochhead et al.	03/21/2000
6,128,085	Buermann et al.	10/03/2000
6,180,239	Whitesides et al.	01/30/2001
6,309,580	Chou	10/30/2001
6,518,168	Clem et al.	02/11/2003

#### OTHER PATENT DOCUMENTS

09/698,317	Choi et al.	10/27/2000
09/907,512	Sreenivasan et al.	07/16/2001
10/616,294	Choi et al.	07/09/2003

#### FOREIGN PATENT DOCUMENTS

<u>Document No.</u>	<u>Inventor</u>	<u>Pub. Date</u>
DE 2800476	Lamprecht et al.	07-13-1978
JP 1-196749	Matsumoto et al.	08-08-1989
WO 01/79592	Hallberg et al.	10-25-2001
WO 01/79933	Heidari	10-25-2001
WO 01/90816	Heidari	11-29-2001

#### NON-PATENT DOCUMENTS

Chou et al. "Imprint of Sub-25 nm Vias and Trenches in Polymers," *Applied Physics Letters*, 67(21), pp. 3114-3116, 1995.

Chou et al. "Imprint Lithography with 25-Nanometer Resolution," *Science*, vol. 272, pp. 85-87, Apr. 5, 1996.

Haisma, J. et al. "Mold-Assisted Nanolithography: A Process for Reliable Pattern Replication," *Journal of Vacuum Science and Technology*, vol. 14, pp. 4124-4128, 1996.

Chou et al. "Imprint Lithography with Sub-10 nm Feature Size and High Throughput", *Microelectronic Engineering* 35, pp. 237-240, 1997.

Feldman et al., "Wafer Chuck For Magnification Correction in X-Ray Lithography," *American Vacuum Society*, pp.3476-3479, 1998.

Scheer, H.C. et al. "Problems of Nanoimprinting Technique for Nanometer Scale Pattern Definition," *Journal of Vacuum Science and Technology*, vol. 16, pp. 3917-3921, 1998.

Colburn, M. et al. "Step and Flash Imprint Lithography: New Approach to High-Resolution Patterning," *Proc. of SPIE*, vol. 3676, pp. 379-389, 1999.

Chou, Stephen et al. "Lithographically-induced Self Assembly of Periodic Micropillar Arrays," *Journal of Vacuum Science and Technology*, vol. 17, pp. 3197-3202, 1999.

Ruchhoeft, P. et al. "Patterning Curved Surfaces: Template Generation by Ion Beam Proximity Lithography and Relief Transfer by Step and Flash Imprint Lithography," *Journal of Vacuum Science and Technology*, vol. 17, pp. 2965-2982, 1999.

Choi, B.J. et al. "Design of Orientation Stages for Step and Flash Imprint Lithography," *Precision Engineering*, vol. 25, pp. 192-199, 2001.

Chou. "Nanoimprint Lithography and Lithographically Induced Self-Assembly," *MRS Bulletin*, pp. 512-517, July 2001.

CERTIFICATE OF MAILING

Respectfully Submitted,  
I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in a package addressed to: MAIL STOP PATENT APPLICATION, Commissioner for Patents, Alexandria, VA 22313-1450

Signed: Alexis Sheffield  
Typed Name: Alexis Sheffield  
Date: March 2, 2004

Respectfully,



Kenneth C. Brooks  
Reg. No. 38,393

P.O. Box 81536  
Austin, Texas 78708-1536  
Telephone: 512-527-0104  
Facsimile: 512-527-0107  
patentsrus@earthlink.net



Approved for use through 10/31/2002. OMB 0651-0031  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449A/PTO

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet

2

of

4

**Complete if Known**

Application Number

10/735,110

**Filing Date**

12/12/2003

**First Named Inventor**

Nimmakavala et al.

## Group Art Unit

Unassigned

Examiner Name

Unassigned

Attorney Docket Number

P122/MII-94-69V18

## FOREIGN PATENT DOCUMENTS

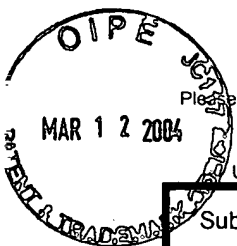
[illegible]Examiner  
Signature

Date \_\_\_\_\_

**Considered**

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.



Please type a plus sign (+) inside this box →



PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

<b>Substitute for form 1449B/PTO</b>  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)				<b>Complete if Known</b>	
				<b>Application Number</b>	10/735,110
				<b>Filing Date</b>	12/12/2003
				<b>First Named Inventor</b>	Nimmakayala et al.
				<b>Group Art Unit</b>	Unassigned
				<b>Examiner Name</b>	Unassigned
<b>Sheet</b>	3	<b>of</b>	4	<b>Attorney Docket Number</b>	P122/MII-94-69V18

<b>OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS</b>			
<b>Examiner Initials*</b>	<b>Cite No.<sup>1</sup></b>	<b>Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.</b>	<b>T<sup>2</sup></b>
	B27	CHOU et al., "Imprint of Sub-25 nm Vias and Trenches in Polymers," Applied Physics Letters, November 20, 1995, pp. 3114-3116, vol. 67(21).	
	B28	CHOU et al., "Imprint Lithography with 25-Nanometer Resolution," Science, Apr. 5, 1996, pp. 85-87, vol. 272.	
	B29	HAISMA et al., "Mold-Assisted Nanolithography: A Process for Reliable Pattern Replication," Journal of Vacuum Science and Technology, Nov/Dec 1996, pp. 4124-4128, vol. B 14(6).	
	B30	CHOU et al., "Imprint Lithography with Sub-10nm Feature Size and High Throughput," Microelectronic Engineering, 1997, pp. 237-240, vol. 35.	
	B31	FELDMAN et al., "Wafer chuck for magnification correction in x-ray lithography," American Vacuum Society, 1998, pp. 3476-3479.	
	B32	SCHEER et al., "Problems of the Nanoimprinting Technique for Nanometer Scale Pattern Definition," Journal of Vacuum Science and Technology, Nov/Dec 1998, pp. 3917-3921, vol. B 16(6).	
	B33	COLBURN. et al., "Step and Flash Imprint Lithography: A New Approach to High-Resolution Patterning", Proc. of SPIE, 1999, pp. 379-389, vol. 3676.	
	B34	CHOU et al., "Lithographically-Induced Self Assembly of Periodic Polymer Micropillar Arrays," Journal of Vacuum Science and Technology, Nov/Dec 1999, pp. 3197-3202, vol. B 17(6).	
	B35	RUCHHOEFT et al., "Patterning Curved Surfaces: Template Generation by Ion Beam Proximity Lithography and Relief Transfer by Step and Flash Imprint Lithography," Journal of Vacuum Science and Technology, 1999, pp. 2965-2982, vol. 17.	
	B36	CHOI et al., "Design of Orientation Stages for Step and Flash Imprint Lithography," Precision Engineering, Journal of the International Societies for Precision Engineering and Nanotechnology, 2001, pp. 192-199, vol. 25.	
	B37	CHOU, "Nanoimprint Lithography and Lithographically Induced Self-Assembly," MRS Bulletin, July 2001, pp. 512-517.	

<b>Examiner Signature</b>		<b>Date Considered</b>	
-------------------------------	--	----------------------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Unique citation designation number. <sup>2</sup>Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231



Please type a plus sign (+) inside this box → ☐

PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute for form 1449B/PTO		<b>Complete if Known</b>			
		<b>Application Number</b>	10/735,110		
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>		<b>Filing Date</b>	12/12/2003		
		<b>First Named Inventor</b>	Nimmakayala et al.		
(use as many sheets as necessary)		<b>Group Art Unit</b>	Unassigned		
		<b>Examiner Name</b>	Unassigned		
Sheet	4	of	4	<b>Attorney Docket Number</b>	P122/MII-94-69V18

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite, No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	B38	CHOI et al., "High Precision Orientation Alignment and Gap Control Stages for Imprint Lithography Processes," U.S. Patent Application 09/698,317, Filed with USPTO on October 27, 2000.	
	B39	SREENIVASAN et al., "High-Resolution Overlay Alignment Methods and Systems for Imprint Lithography," U.S. Patent Application 09/907,512, Filed with USPTO on July 16, 2001.	
	B40	CHOI et al., "Systems For Magnification And Distortion Correction For Imprint Lithography Processes," U.S. Patent Application 10/616,294, Filed with USPTO on July 9, 2003.	

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Unique citation designation number. <sup>2</sup>Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231.